

Matthew R. Boelkins

Department of Mathematics
Grand Valley State University
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EDUCATION

Ph.D. in College Teaching of Mathematics, Syracuse University, Syracuse, NY 13244 May 1998
M.S. in Mathematics, with distinction, Western Washington Univ., Bellingham, WA 98225 June 1993
B.S. in Mathematics, Geneva College, Beaver Falls, PA 15010 May 1991

POSITIONS HELD

Professor of Mathematics, Grand Valley State University, Allendale MI 49401 2012 -
Director of New Student Advising and Registration, GVSU 2013 -
co-Editor-in-Chief, *PRIMUS* 2015 -
Problems, Resources, and Issues in Mathematics Undergraduate Studies
<http://www.tandf.co.uk/journals/titles/10511970.asp>
First Vice President, Mathematical Association of America 2016 - 2018

Associate Editor, *PRIMUS* 2010 - 2014
Associate Professor, Grand Valley State University, Allendale MI 49401 2004 - 2012
Visiting Associate Professor, Hope College, Holland MI 49423 2004 - 2005
Assistant Professor, Grand Valley State University, Allendale MI 49401 1998 - 2004
Graduate Teaching Associate/Assistant, Syracuse University, Syracuse NY 13244 1993 - 1998
Graduate Teaching Assistant, Western Washington University, Bellingham WA 98225 1991 - 1993

PUBLICATIONS (undergraduate student co-authors are indicated in **bold**; peer-reviewed articles are denoted by *)

- [14] *Active Calculus - Multivariable* (free, open-source textbook), with S. Schlicker (lead author) and D. Austin.
Available online at <http://gvsu.edu/s/Ym>, 274pp, (beta version, 8/2015).
- [13] *Active Calculus* (free, open-source textbook), with D. Austin and S. Schlicker.
ISBN 978-0-9898975-3-2. Available online at <http://gvsu.edu/s/xr>, 553pp, (first available 8/2012; latest version, 8/2016).
- [12] (a-i) Nine articles in *The Encyclopedia for Mathematics and Society*, S. J. Greenwald and J. E. Thomley (eds.),
Pasadena, CA: Salem Press, 2011 (article titles and page numbers are on the last page of this vita).
- [11] *Differential Equations with Linear Algebra* (textbook), with J. Goldberg and M. Potter.
ISBN13: 978-0-19-538586-1, Oxford University Press, ©2009, 576pp.
- [10*] "Polynomial Root Squeezing," with **J. From** and **S. Kolins**.
Mathematics Magazine 18:1 (Feb. 2008), pp. 39-44.
- [09*] "On the Ratio Vectors of Chebyshev and Equispaced Polynomials," with **M. Wells**.
The Missouri Journal of Mathematical Sciences 19:1 (2007), pp. 15-28.
- [08*] "A Note on PIPCIRs," with **M. Wells**.
The Pi Mu Epsilon Journal, 12:5 (Fall 2006), pp. 257-263.
- [07*] "From Chebyshev to Bernstein: A Tour of Polynomials Small and Large," with **J. Miller** and **B. Vugteveen**.
The College Mathematics Journal, 37:3 (May 2006), pp. 194-204.
- [06*] "When Students Write the Text."
PRIMUS, 15:2 (June 2005), 97-108.
- [05*] "How we get our Students to Read the Text Before Class," with T. Ratliff.
FOCUS, 21:1 (Jan. 2001), 16-17. (An extended version of this article is available from MAA Online:
<http://www.maa.org/features/readbook.html>.)
- [04] Book and software review on the topic of wavelets for undergraduates, with E. Aboufadel and S. Schlicker.
Am. Math. Monthly, 106:10 (1999), 971-977.
- [03*] "Removable Ambiguities: Making Mathematics More Intelligible."
PRIMUS, 8:4 (Dec. 1998), 331-339.
- [02*] "Teaching Calculus Students How To Study," with T. Pfaff.
PRIMUS (Problems, Resources, and Issues in Mathematics Undergraduate Studies), 8:3 (Sept. 1998), 253-264.
- [01] "On the Spectral Radius of a Positive Operator."
Syracuse University Ph.D. thesis (advisor: L. J. Lardy), May 1998.

SELECT INVITED PRESENTATIONS¹

- “How Can Technology Extend the Humanity of Learners? A Dialogue.” With R. Talbert, Keynote Address for the 2016 Teaching & Learning with Technology Symposium, Grand Valley State University, 3/23/2016.
- “Preparing Students for In-class Active Learning: Reading Assignments and More.” Address to Syracuse University Project Advance Seminars: (Upstate) Syracuse, NY, 10/22/2015; (Downstate) New York, NY, 10/23/2015.
- “How Now Shall We Teach Mathematics?” Plenary workshop, Project NExT, Mathfest, Wash. DC, 8/2/2015.
- “Calculus 2020: A Vision for the Future.” Plenary address, KC Math & Tech Expo, Kansas City, MO, 10/4/14.
- “The Geometry of Polynomials.” Keynote address, SUMMR (Summer Undergraduate Michigan Mathematics Research) Conference, GVSU, 7/23/14.
- “Better than we Deserve.” Opening plenary address, Michigan MAA Section Meeting, Flint, MI, 5/2/14.
- “Where the Critical Numbers of a Polynomial Aren’t.” MAA Invited Paper Session on the Zeros and Critical Numbers of Polynomial Functions, Joint Mathematics Meetings, San Diego, CA, 1/11/13.
- “Fibonacci’s Garden,” presented in multiple settings, including
 - *15th Annual George M. Kitchen Lecture*, Kalamazoo, MI 5/15/13.
 - Michigan Mathematics Prize Competition Banquet, Hope College, 3/2/13.
 - *The Art of Mathematics*, public lecture, Grand Valley State University, 2/8/07.
- “How Seashells Grow: Another Spiral Story,” presented at
 - Hope College Mathematics Colloquium, 4/19/11.
 - Calvin College Mathematics Colloquium, 2/24/11.
 - Taylor University Mathematics Colloquium, 9/16/10.
- “The Geometry of Polynomials: Classic Results, Recent Progress, and Problems Still Unsolved.” Keynote address, Upper Peninsula Michigan MAA Meeting, Lake Superior State University, 9/12/08.
- “Student Research with Polynomial Functions: Calculus at Work,” presented at
 - Calvin College Mathematics Colloquium, 10/12/06.
 - Downstate Project Advance Seminar, Syracuse University, New York, NY, 5/19/06.
 - Upstate Project Advance Seminar, Syracuse University, Syracuse, NY, 5/18/06.
- “From Chebyshev to Bernstein: A Tour of Polynomials Small and Large,” presented at
 - Andrews University Mathematics Seminar, 1/28/05.
 - Hope College Mathematics Colloquium, 11/13/03.
 - Kalamazoo College Mathematics Colloquium, 10/1/03.

HONORS AND DISTINCTIONS

2016 Michigan Association of State Universities Distinguished Professor of the Year ([press release](#))
2016 Grand Valley State University [Glenn A. Niemeyer Award](#)
2014 Grand Valley State University Outstanding Academic Advising and Student Services Award
2013 Michigan Section of the Mathematical Association of America Distinguished Teaching Award
2003 Grand Valley State University Division of Science and Mathematics Pew Teaching Excellence Award
1999-2000 Mathematical Association of America (MAA) Project NExT Fellow
1998 Donald E. Kibbey Prize for Teaching Excellence (co-recipient), Syracuse University Department of Mathematics
1997 Special Chair’s Citation for Exceptional Contributions to Undergraduate Education in Mathematics, Syracuse University Department of Mathematics
1995-1998 Teaching Fellow, Syracuse University Graduate School
1995 Outstanding Teaching Assistant Award, Syracuse University

¹a full chronological list of presentations given may be found at <http://gvsu.edu/s/Gz> as an addendum to this vita.

UNDERGRADUATE RESEARCH SUPERVISED

2009 GVSU McNair Scholars Program

Student: Neil Biegalle

2005 Grand Valley State University REU, National Science Foundation grant DMS-0451254.

Students: Justin From and Samuel Kolins

2003 Grand Valley State University REU, National Science Foundation grant DMS-0137264.

Students: Jennifer Miller and Ben Vugteveen

2001 GVSU SURP (Summer Undergraduate Research Project)

Student: Matthew J. Wells

SELECT SPONSORED UNDERGRADUATE RESEARCH PRESENTATIONS

Neil Biegalle*, "The Extremality of Bernstein Polynomials." Mathfest, Portland, OR, August 2009.

Sam Kolins*, "Polynomial Root Squeezing and the Minimum Span Problem." Mathfest, Albuquerque, NM, August 2005.

Justin From, "A Problem Related to the Sendov Conjecture." Mathfest, Albuquerque, NM, August 2005.

Jennifer Miller and Ben Vugteveen, "Ratio Vectors of Polynomials with Distinct Real Zeros." Mathfest, Boulder, CO, August 2003.

Matt Wells, "Critical numbers of polynomials as a function of root location." Mathfest, Madison, WI, August 2001.

* - these students each received a prize from the MAA for giving the best talk in their respective sessions.

SELECT SERVICE ACTIVITIES

First Vice President, Mathematical Association of America, 2016-18

Governor, Michigan Section of the Mathematical Association of America, 2013-16

Provost's 2016-2020 Strategic Positioning Committee, GVSU, 2013-15

Assistant Chair, Department of Mathematics, Grand Valley State University, 2008-11, 2013-15

Chair, Search Committee, 2008-09, 2009-10, 2010-2011

Chair, Personnel Committee, 2013-14

Acting Chair, Department of Mathematics, Grand Valley State University, July 2011-December 2011

Faculty Development Committee, College of Liberal Arts and Sciences,

Grand Valley State University, 2005-11 (committee chair 2005-06, 2006-07, 2007-08).

Co-editor (and co-founder), *Mackinac Gazette*, annual mathematics department alumni newsletter

2002, 2003, 2004, 2006, 2007, 2008, 2009, 2010, 2011, 2013, 2014, 2015

Editorial Board, *PRIMUS*: Problems, Resources, and Issues in Mathematics Undergraduate Studies, 2006-
University Academic Senate, Grand Valley State University, 2007-

Executive Committee, Michigan Section of the Mathematical Association of America, 2007-2010

Four Year Vice Chair and Annual Meeting Program Chair, 2007-08

Chair, 2008-09 Past Chair, 2009-10

Governor, 2013-2016

Personnel Committee, Department of Mathematics, Grand Valley State University, 2005-07, 2012-13.

Program Committee, Annual Meeting of the Michigan Section of the MAA, 2005-06.

Co-organizer, annual Michigan Project NExT Symposium, 2001-05.

Organizer, Sixth Annual Michigan Undergraduate Mathematics Conference, 2003.

Search Committee, Department of Mathematics, Grand Valley State University, 1999-2000, 2002-03

Student Affairs Committee, Department of Mathematics, Grand Valley State University, 2002-04

(committee chair 2003-04).

Organizing Committee, Michigan Undergraduate Mathematics Conference, 2002-03.

Co-organizer, Math in Action Conference, 2001, 2002.

COURSES TAUGHT AT GVSU

Math 122, College Algebra	Math 123, Trigonometry
Math 201, Calculus I	Math 202, Calculus II
Math 203, Calculus III	Math 210, Communicating in Mathematics
Math 227, Linear Algebra	Math 302, Linear Algebra and Differential Equations
Math 304, Analysis of Differential Equations	Math 327, Linear Algebra II
Math 341, Euclidean Geometry	Math 405, Numerical Analysis
Math 495, The Nature of Modern Mathematics	Math 496, Senior Thesis
Math 685, Workshop for Teachers of AP Calculus	

Enumeration of publication [12]

[12] Nine articles in *The Encyclopedia for Mathematics and Society*, S. J. Greenwald and J. E. Thomley (eds.), Pasadena, CA: Salem Press, 2011.

- [a] Bees: the Geometric Efficiency of Honeycomb, pp. 103-105.
- [b] How a Decaying Quantity Tells its Age through the Carbon it Contains, pp. 157-159.
- [c] The Vindication of Euclid: the Parallel Postulate Really is a Postulate, pp. 750-752.
- [d] Exponential and Logarithmic Functions: Powers and their Undoing, pp. 370-372.
- [e] The Curious Nature of Infinity, pp. 504-506.
- [f] Polynomials: the Building Blocks of Functions, pp. 784-786.
- [g] The Pythagorean Theorem: a Masterpiece of Mathematics, pp. 827-829.
- [h] What is Mathematics, Really?, pp. 608-610.
- [i] Rate of Change: Changing Quantities and Changing Rates, pp. 405-408.